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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,988	11/12/2003	Ljupco Kocarev	2110-85-3	7343
7590                    05/28/2008			EXAMINER	
GRAYBEAL JACKSON HALEY LLP			NGO, CHUONG D	
Suite. 350			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/712,988	<b>Applicant(s)</b> KOCAREV ET AL.
	<b>Examiner</b> Chuong D. Ngo	<b>Art Unit</b> 2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 April 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-10 and 13-27 is/are rejected.

7) Claim(s) 11 and 12 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-166/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, the recitation “generating the first pseudo-random value from a previously chaos-based pseudo-random value generated before the first chaos-based pseudo-random value” in claim 20 is not supported by the specification.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-10 and 13-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-10 and 15-25 are clearly directed to a method. In order for a method to be a patent eligible process under 35 USC 101, the method must (1) be tied to another enumerated statutory category (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. (See *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780,787-88 (1876)). Since in claims 1-10 and 15-25 fail to tie the method to another enumerated statutory category and the method clearly does not

transform a subject matter such as an article or material to a different state or thing, claims 1-10 and 15-25 are clearly directed to a non-statutory process.

Claims 13,14,26 and 27 are directed to an invention that merely performs calculations and manipulations of data. In order for such a claimed invention that merely performs calculations and manipulations of data to be statutory, the claimed invention must accomplish a practical application, and is not directed to a preemption of a calculation and/or manipulation data . That is the claimed invention must transform an article or physical object to a different state or thing, or produce a useful, concrete and tangible result and not cover every substantial practical application . See State Street 47 USPQ2d, Benson 175 USPQ , and "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility", OG Notices: 22 November 2005. It is clear from claims 13,14,26 and 27 that the invention merely performs calculations and manipulations of data. The claimed invention does not perform any physical transformation. The inputs are numbers and the output is also a number. Further, the result of the invention is a mere numerical value without a practical application recited in the claims to make the result to have real world value. Thus, the result is not useful, concrete and tangible. Therefore, the claimed invention is directed to non-statutory subject matter as the claimed invention fails to accomplish a practical application. Further, since the claims appear to cover every substantial practical application, they are also directed to a preemption of the claimed manipulation and calculation of data.

4. Claims 1-3,5-7 and 15-27 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Butler (6,678,707)

As per claims 1,15,16,18,19,21,26 and 27, Butler discloses in figure 8 a generation of a chaos-based pseudo-random sequence in an encryption application, including defining a chaotic map (402-412) for generating a pseudo-random sequence of integer numbers in a certain interval, choosing a seed (the initial states) for the pseudo-random sequence of integer numbers, and generating numbers of the pseudo-random sequence, defining a function (800) on the interval whose inverse has a plurality of branches and calculating numbers of a chaos-based pseudo-random sequence by applying the function to corresponding integer numbers of the of the pseudo-random sequence as claimed.

As per claims 2, 5 ,6,17,24 and 25, Butler disclose in col. 8, lines 18-20, the function being also exclusive-or function as that of the present invention and thus the inverse of the function has a number of branches equal to the largest bound of the interval.

As per claims 3,7, 22 and 23 Butler discloses in figure 3 the chaotic map a truncated linear congruential generator.

5. Claims 1-3,5-7 and 15-27 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Smeets (6,813,625)

As per claims 1,15,16,18,19,21,26 and 27, Smeets discloses in figure 2 a generation of a chaos-based pseudo-random sequence in an encryption application including defining a chaotic map (201) for generating a pseudo-random sequence of integer numbers in a certain interval, choosing a seed (the initial states) for the pseudo-random sequence of integer numbers, and generating numbers of the pseudo-random sequence (Z), defining a function F(203) on the interval whose inverse has a plurality of branches and calculating numbers of a chaos-based pseudo-

random sequence by applying the function to corresponding integer numbers of the of the pseudo-random sequence as claimed.

As per claims 2, 5 ,6,17,24 and 25, Smeets in col. 6, lines 1-5, the function F being also exclusive-or function (mod2 sum) as that of the present invention and thus the inverse of the function has a number of branches equal to the largest bound of the interval.

As per claims 3,7, 22 and 23 Smeets discloses col.5, , lines 45-67 the chaotic map a truncated linear congruential generator.

6. Claims 4 and 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Applicant's arguments filed on 03/14/2008 have been fully considered but they are not persuasive.

Regarding the rejection of claim 20 is rejected under 35 U.S.C. 112, first paragraph, it is respectfully submitted that the paragraph [54] discloses the generation a pseudo-random sequence of bits is easily repeated, mutatis mutandis, for generators of sequences of pseudo-

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random numbers. It does not support for “generating the first pseudo-random value from a previously chaos-based pseudo-random value” as recited in the claims.

Regarding the rejection of claims 1-3,5-7 and 15-27 are rejected under 35 U.S.C. 102(e), it is respectfully submitted that Butler clearly discloses throughout the specification the random numbers are to be used in Cryptographic codes as an encryption key as recited in the claimed (see figures 9 and 10). Further, Butler also disclose a generation of pseudo-random sequence with maximum period between the repetition of the sequence (see col. 6, lines 32-37) .

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Lewis, Jr. A. Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong D Ngo/  
Primary Examiner, Art Unit 2193

05/23/2008